

M A T E R I A L S A F E T Y D A T A S H E E T

QUICK REFERENCE:

C - 4 6 6


H - O - H Water Technology, Inc.
 500 South Vermont Street
 Palatine, Illinois 60067

EMERGENCY PHONE No's

847 - 358 - 7400 (H - O - H BUSINESS Hrs.)
 800 - 424 - 9300 (CHEMTREC - 24 Hrs.)

H M I S:

4 = EXTREME
 3 = SEVERE
 2 = MODERATE
 1 = SLIGHT
 0 = INSIGNIFICANT

HEALTH	2
FLAMMABILITY	0
REACTIVITY	0

D O T:

HAZARD
 LABELING

IN D O T LISTED
 POLYETHYLENE
 CONTAINERS



PRODUCT IDENTIFICATION	PRODUCT NAME	CHEMICAL FAMILY	DATE	Rev.No.	SUPERSEDES	E P A - T P Q	BY
	C - 4 6 6	COOLING WATER TREATMENT	2 - 28 - 12	1	1 - 26 - 12	NA	

HAZARDOUS COMPONENTS	CHEMICAL NAME	COMMON NAME	C A S No.	PERCENT	OSHA PEL	ACGIH - TLV	OTHER
	SODIUM HYDROXIDE	LYE, CAUSTIC SODA	1310 - 73 - 2	8.9	2 mg / m ³	2 mg / m ³	OSHA Cel. 2 mg / m ³
	SODIUM MOLYBDATE	SAME	7631 - 95 - 0	.95	5 mg / m ³	5 mg / m ³	NOT APPLICABLE
	ZINC OXIDE	ZINC WHITE, CALAMINE	1314 - 13 - 2	.72	NA	NA	NOT APPLICABLE

COMMENT	1. ALWAYS FLUSH CHEMICAL METERING PUMPS AND TUBING WITH WATER PRIOR TO AND AFTER USING THIS PRODUCT TO PREVENT PLUGGING. 2. THE D.O.T. SHIPPING DESCRIPTION FOR C-466 IS "CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S. (SODIUM HYDROXIDE), 8, UN3266, PG II".
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PHYSICAL DATA	BOILING POINT (Degrees Fahrenheit) 215° SOLUBILITY (in water) COMPLETE EVAPORATION RATE (water = 1.0) < 1.0 VAPOR PRESSURE (in millimeters of Mercury) WATER SPECIFIC GRAVITY (water = 1.0) 1.151 pH 13.4 VAPOR DENSITY (air = 1.0) NA PERCENT (%) VOLATILE (by volume) NA APPEARANCE and ODOR DARK AMBER LIQUID WITH MILD ORGANIC ODOR.
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FIRE AND EXPLOSION	FLASH POINT (Degrees Fahrenheit) NONE METHOD NA FLAMMABLE LIMITS LOWER EXPLOSIVE LIMIT NOT APPLICABLE UPPER EXPLOSIVE LIMIT NOT APPLICABLE EXTINGUISHING MEDIA WATER COOL CONTAINERS TO PREVENT RUPTURE. CONTAIN ANY SPILLS TO AVOID REACTIONS THAT MAY GENERATE HEAT. THIS PRODUCT WILL NOT BURN OR DIRECTLY PROMOTE FIRE. SPECIAL FIRE FIGHTING PROCEDURES CONTAIN SPILLS THIS PRODUCT IS MODERATELY ALKALINE IN NATURE AND IF SPILLED, MAY CAUSE UNPREDICTABLE REACTIONS WITH OTHER CHEMICALS, METALS, OR CERTAIN BUILDING MATERIALS. UNUSUAL FIRE AND EXPLOSION HAZARDS SECONDARY REACTIONS UNDER NORMAL CONDITIONS THIS PRODUCT WILL NOT SUPPORT COMBUSTION OR ACCELERATE A FIRE. IF CONTACT WITH BUILDING MATERIALS, OTHER CHEMICALS, OR LIVE ELECTRICAL SERVICES OCCURS DURING A FIRE, UNPREDICTABLE HEAT, HAZARDOUS GASES, OR ELECTRICAL ARCS MAY BE PRODUCED.
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REACTIVITY DATA	STABILITY STABLE <input checked="" type="checkbox"/> UNSTABLE <input type="checkbox"/> CONDITIONS TO AVOID NONE KNOWN INCOMPATIBILITY (Materials to Avoid) STRONG MINERAL ACIDS, OTHER CHEMICAL TREATMENT FORMULATIONS, BROMICIDE (BROMINE RELEASE AGENT). HAZARDOUS DECOMPOSITION PRODUCTS NONE UNDER ORDINARY CIRCUMSTANCES. UNDER EXTREME HEATING SUCH AS IN A FIRE, DECOMPOSITION MAY OCCUR, OXYGEN MAY BE PRODUCED. HAZARDOUS POLYMERIZATION MAY WILL OCCUR <input type="checkbox"/> WON'T OCCUR <input checked="" type="checkbox"/> CONDITIONS TO AVOID NONE KNOWN
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SPECIAL PRECAUTIONS	STORAGE AND HANDLING 1. PROTECT CONTAINERS AGAINST PHYSICAL DAMAGE. 2. STORE IN A COOL, DARK, WELL-VENTILATED LOCATION AWAY FROM DIRECT SUNLIGHT AND OTHER SOURCES OF RADIANT HEAT. 3. KEEP CONTAINERS TIGHTLY CLOSED WHEN NOT IN USE. NEVER MOVE AN OPEN OR LOOSELY CLOSED CHEMICAL CONTAINER. 4. WEAR HAND AND FOOT PROTECTION WHEN MOVING HEAVY CONTAINERS. OTHER 1. NOT TO BE TAKEN INTERNALLY. 2. NOT TO BE USED FOR OTHER THAN SPECIFIED PURPOSE. 3. KEEP AWAY FROM CHILDREN. 4. NEVER MIX THIS MATERIAL WITH ANY OTHER CHEMICAL UNLESS AT THE SPECIFIC DIRECTION OF H - O - H PERSONNEL. 5. TRIPLE RINSE EMPTY CONTAINERS BEFORE OFFERING FOR DISPOSAL OR SALVAGE. NEVER REUSE EMPTY CONTAINERS.
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HEALTH HAZARD DATA	THRESHOLD LIMIT VALUE	21.6 mg / m ³ BASED ON A MIST OF C - 466 IN AIR RELATIVE TO ITS PURE COMPONENTS.	C-466
ACUTE HEALTH HAZARDS		CHRONIC HEALTH HAZARDS	
TISSUE BURNS MODERATELY CORROSIVE TO ALL BODY TISSUES WITH WHICH IT COMES IN CONTACT.		NONE NO CHRONIC HEALTH HAZARDS ARE INVOLVED. FREQUENT EXPOSURE TO LEVELS MODERATELY IN EXCESS OF THE TLV MAY PRODUCE SYMPTOMS, BUT IF EXPOSURE IS ELIMINATED, SYMPTOMS SHOULD DISAPPEAR.	

EFFECTS OF EXPOSURE	SKIN AND EYES / TARGET ORGAN	INHALATION / TARGET ORGAN	INGESTION / TARGET ORGAN
	BURNS CAUSES PAINFUL INSTANTANEOUS IRRITATION OF EYES AND EYELIDS. MAY CAUSE ULCERATION OR PERFORATION OF EYES OR EYELIDS, LOSS OF EYES OR EYESIGHT IS POSSIBLE. MAY CAUSE ULCERATION OF SKIN WITH SLIPPERY, SOAPY FEELING. BURNS ARE POSSIBLE.	CAUTION - LOW LEVEL VOLATILE COMPONENT BREATHING THE VAPORS OF THE CONCENTRATED PRODUCT OR ITS APPLICATION DILUTIONS MAY PRODUCE MUCOUS MEMBRANE IRRITATION, FATIGUE, HEADACHE, NAUSEA, OR DIZZINESS. IF PRODUCT LIQUID OR MIST IS INHALED, DAMAGE AND SCARRING OF NASAL OR BRONCHIAL TISSUE MAY RESULT.	STRONG IRRITANT IRRITATION OF LIPS, MOUTH, AND THROAT. ALSO PAIN IN SWALLOWING, STOMACH AND ABDOMINAL PAIN, NAUSEA AND VOMITING, DIARRHEA, AND POSSIBLE SHOCK. DEATH MAY RESULT IF THE CONCENTRATED PRODUCT IS INGESTED IN QUANTITY AND PROMPT MEDICAL TREATMENT IS NOT OBTAINED.
CONDITIONS AGGRAVATED	DERMATITIS, BLISTERS, BURNS, OR ANY PRE-EXISTING SKIN IRRITATION IF CONTACT OCCURS.	ASTHMA, BRONCHITIS, EMPHYSEMA, OR, POSSIBLY, ANY OTHER CHRONIC RESPIRATORY DISEASE.	IF INGESTION OCCURS, STOMACH ULCERS OR OTHER PRE - EXISTING DIGESTIVE CONDITIONS.

EMERGENCY PROCEDURES	SKIN AND EYES	INHALATION	INGESTION
	EYES FLUSH EYES WITH WATER FOR AT LEAST 15 MINUTES HOLDING EYELIDS OPEN. GET IMMEDIATE MEDICAL ATTENTION. SKIN FLUSH WITH WATER FOR 15 MINUTES. TREAT FOR BURNS. OBTAIN MEDICAL ADVICE. REMOVE EXPOSED CLOTHING AND WASH WELL BEFORE REUSE. CONTINUE TO WASH WITH LUKE - WARM WATER UNTIL THE FEELING OF STICKINESS OR SOAPINESS DISAPPEARS.	CLEAR AIRWAY IF LIQUID CONCENTRATE, SPRAY, OR MIST IS INHALED, REMOVE SUBJECT TO FRESH AIR. IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION. GIVE OXYGEN BY PROPERLY TRAINED PERSONNEL IF BREATHING IS DIFFICULT. KEEP SUBJECT WARM AND AT REST. OBTAIN EMERGENCY MEDICAL ATTENTION. DO NOT LEAVE PERSON UNATTENDED. ENCOURAGE NOSE BLOWING, COUGHING, AND SPITTING - OUT.	DO NOT INDUCE VOMITING IF CONSCIOUS, DILUTE INGESTED MATERIAL WITH 2 OR MORE GLASSES OF WATER OR MILK. OBTAIN EMERGENCY MEDICAL ATTENTION. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. INDUCED VOMITING IS NOT RECOMMENDED DUE TO POSSIBLE BRONCHIAL OR PULMONARY INGESTION. EMERGENCY MEDICAL ATTENTION IS REQUIRED TO REMOVE ANY INGESTED CAUSTIC AND MINIMIZE INTERNAL BURNS AND TISSUE DAMAGE.

CARCINOGEN LISTING	NATIONAL TOXICOLOGY PROGRAM (NTP)	IARC MONOGRAPHS	OSHA REGULATED
	NO	NO	NO

SPILL OR LEAK PROCEDURES	SPILLS AND RELEASES	WASTE DISPOSAL METHODS
	REMOVE ALL IGNITION SOURCES. VENTILATE THE AREA. NOTIFY THE APPROPRIATE POLLUTION CONTROL (ESDA) AUTHORITIES IF LEAKAGE ENTERS A SEWER OR IS ESCAPING FROM THE PREMISES. COLLECT SPILLED MATERIAL INTO SUITABLE CONTAINERS FOR RECLAIM OR DISPOSAL. NEUTRALIZE WITH DILUTE SULFURIC, HYDROCHLORIC, OR SULFAMIC ACIDS OR SODIUM BISULFITE. WHEN NEUTRALIZING WITH DILUTE ACID, BE CAREFUL FOR HEAT GENERATION AND POSSIBLE OVER NEUTRALIZATION LEADING TO ACIDIC CONDITIONS.	CONSULT FEDERAL, STATE, AND LOCAL REGULATIONS PERTAINING TO WASTE DISPOSAL.

CONTROL MEASURES	EYE PROTECTION	TIGHT - FITTING CHEMICAL GOGGLES AND FACE SHIELD.		
	RESPIRATORY PROTECTION	NOT REQUIRED FOR ORDINARY USE. DURING EMERGENCY CONDITIONS OR IF A SERIOUS SPILL OCCURS, AN AIR PURIFYING RESPIRATOR DESIGNED TO ABSORB ALKALINE VAPORS (AMMONIA, AMINES, ETC.) AND CHLORINE SHOULD BE USED.		
	OTHER PROTECTIVE EQUIPMENT	IMPERMEABLE CLOTHING. SAFETY SHOWERS AND EYEWASH FOUNTAINS SHOULD BE INSTALLED IN STORAGE AND HANDLING AREAS.		
	LOCAL EXHAUST	YES	SPECIAL VENTILATION	NOT REQUIRED FOR NORMAL USE.
	MECHANICAL VENTILATION	NOT REQUIRED FOR NORMAL USE.	OTHER VENTILATION	NOT REQUIRED FOR NORMAL USE.
	PROTECTIVE GLOVES	NON - SLIP ELBOW LENGTH VINYL OR RUBBER GLOVES.	PROTECTIVE CLOTHING	RUBBER OR VINYL APRON.

REFERENCES	<ol style="list-style-type: none"> 1. Threshold Limit Values For Chemical Substances And Physical Agents In The Work Environment; ACGIH, 1989. 2. OSHA Safety and Health Standards: 29CFR 1900 to 1910, July 1, 1988 3. Fifth Annual Report on Carcinogens; U. S. Dept. of Health and Human Services, National Toxicology Program, 1989 (Summary). 4. M. Sittig, Handbook of Toxic & Hazardous Chemicals, (Noyes Publications, Park Ridge, N. J., 1981). 5. Community Right - To - Know Manual, (Thompson Publishing Group, Washington, D. C., 1990). 6. Right - To - Know/Chemical Manual (ILLINOIS MANUFACTURES ASSOCIATION; Rooks, Pitts, and Poust, 1990). 7. Toxic and Hazardous Industrial Chemicals Safety Manual (THE INTERNATIONAL TECHNICAL INFORMATION INSTITUTE, 1975). 8. M. J. Lefevre, S. A. Conibear, First Aid Manual for Chemical Accidents, 2nd ed. (Van Nostrand Reinhold, New York, 1989). 9. Hazardous Materials Guide; Shipping, Materials Handling and Transportation (J. J. KELLER & ASSOCIATES, Inc., Neenah, Wisconsin, Dec. 1990) 10. Hazard Communication Guide; Federal & State Right to Know Standards (J. J. KELLER & ASSOCIATES, Inc., Neenah, Wisconsin, Dec. 1990)
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REPORTABLE QUANTITY	IF MORE THAN THE INDICATED QUANTITY IS DISCHARGED TO DRAINAGE (Sewer/surface water), AIR, OR SOIL, IMMEDIATELY REPORT AS INDICATED.		
	CERCLA OR EPA (Extremely Hazardous) NATIONAL RESPONSE CENTER (800 - 424 - 8802)	STATE EMERGENCY RELEASE NOTIFICATION ILLINOIS (Only) 800 - 782 - 7860 (Consult for others)	LOCAL EMERGENCY RESPONSE AUTHORITY Record Telephone No. of Local Response Authority
WRITTEN REPORT MUST FOLLOW	11,235 lbs. / 1170 gals. (Sodium Hydroxide in Water)	CONTACT	CONTACT